U.S. Department of Health and Human Services
NIH News
National Institutes of Health

National Institute of Child Health and Human Development (NICHD)

EMBARGOED FOR RELEASE
Tuesday, September 5, 2006
12:01 a.m. ET
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Overweight in Early Childhood Increases Chances for Obesity at Age 12

Children who are overweight as toddlers or preschoolers are more likely to be overweight or obese in early adolescence, report researchers in a collaborative study by the NIH and several academic institutions.

The researchers periodically collected height and weight measurements of a sample of children, beginning at age 2 and continuing until age 12. Their analysis, appearing in the September *Pediatrics*, provides some of the strongest evidence to date that overweight in early childhood increase the chances for overweight in later life.

“These findings underscore the need to maintain a healthy weight beginning in early childhood,” said Duane Alexander, M.D., the Director of NIH’s National Institute of Child Health and Human Development, which funded the study. “Contrary to popular belief, young children who are overweight or obese typically won’t lose the extra weight simply as a result of getting older.”

A large number of studies have found that obesity persists from childhood, through adolescence and into adulthood. Obese adolescents are likely to become overweight adults and, as such, at risk for the complications of obesity — cardiovascular disease, high blood pressure, stroke, and diabetes.

Most previous studies have collected height and weight information only from a few intervals in childhood and 1 or 2 intervals in later life. The strength of the current analysis is that it was conducted on data collected during frequent intervals over an extended period of time, from age 2 through age 12, explained the study’s principal investigator, Philip R. Nader, M.D., Professor Emeritus of Pediatrics at the University of California, San Diego, School of Medicine. Dr. Nader added that the children who took part in the study were born in 1991, and so were growing up during the current trend of overweight and obesity in the general population.

The analysis was conducted on data collected as part of the NICHD Study of Early Child Care and Youth Development. For the study, researchers followed the

development of more than 1000 children from across the United States, enrolled in the study at birth. Although the study sample was not nationally representative of the United States as a whole, the sample did include children from ethnically diverse and economically disadvantaged households. More than 80 percent of the children in the study grew up in two-parent families. For the most part, the study focused on gathering information relevant to children's experience in various child care arrangements. However, measurements of the children's height and weight were collected when the children were ages 2, 3, 4 ½, 7, 9, 11, and 12.

For the current analysis, the researchers calculated body mass index, or BMI, for children in the study. BMI is a standard measure calculated from an individual's height and weight. Children were classified as overweight if their BMI was at or above the 85th percentile in comparison to national statistics for children their age.

The researchers found that children who were overweight at least once from ages 2 to 4 ½ were 5 times more likely to be overweight at age 12 when compared to children who were not overweight from ages 2 to 4 ½. The more times a child was overweight from ages 7 through 11, the greater the chances the child would be overweight at age 12 in comparison to children who were not overweight from ages 7 through 11. For example, a child who was overweight once during the elementary school years was 25 times more likely to be overweight at age 12 than was a child who was not overweight during the elementary school period. Similarly, when compared to children who were not overweight, children who were overweight twice during the elementary period were 159 times more likely to be overweight at 12, and children overweight 3 times during elementary school were 374 times more likely to be overweight at 12.

Dr. Nader said that the study results strongly suggest that parents concerned about their children's weight should speak to their children's pediatricians about helping their children establish more healthful diet and exercise patterns. Because pediatricians regularly measure their patients' height and weight, Dr. Nader added, they are in an excellent position to proactively advise parents if they see signs of unhealthful weight gain.

"Pediatricians can be confident in counseling parents to begin to address the at-risk child's eating and activity patterns rather than delaying in hopes that overweight and the patterns that support it will resolve themselves in due course," the study authors wrote. "Identifying children at risk for adolescent obesity provides physicians with an opportunity for earlier intervention with the goal of limiting the progression of abnormal weight gain that results in the development of obesity-related morbidity."

The researchers also reported some risk of overweight at age 12 for children who were not overweight during the preschool and elementary years but had still had relatively higher BMIs at those ages. For example, 4 ½ year old children with BMIs between the 50th and 75th percentile were 4 times more likely to be overweight at

age 12 than were children below the 50th percentile at age 4 ½.

Children in these percentiles were within the range of normal weight, Dr. Nader noted, and so do not need a weight management regimen. Still, given the study findings that preschool and elementary age children with BMIs between the 50th and 75th percentile are at risk for overweight at age 12, it would be advisable for parents and physicians to observe children in this BMI range and to begin corrective action if the children's weight edges upward.

The study authors also found that no children in the study who were below the 50th percentile at preschool or elementary school age were overweight at age 12.

Information about the NICHD Study of Early Child Care and Youth Development is available at http://www.nichd.nih.gov/od/secc/index.htm.

The NICHD sponsors research on development, before and after birth; maternal, child, and family health; reproductive biology and population issues; and medical rehabilitation. For more information, visit the Institute's Web site at http://www.nichd.nih.gov/.

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